Atty. Dkt. No. 03CR254/KE (047141-0348)

REMARKS

Applicants thank the Examiner for the detailed Office Action dated January 2, 2008.

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 2-3, 13-14 and 17-18 are requested to be cancelled without prejudice. Claims 1, 10 and 15 are currently being amended. Claims 21-26 are being added. Applicants respectfully request entry of these amendments to place the application on better condition for appeal.

A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. After amending the claims as set forth above, claims 1, 4-12, 15-16 and 19-26 are now pending in this application.

Oath or Declaration

On page 2 of the Office Action the Examiner rejected the Oath/Declaration as being defective. The Examiner stated:

> The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP 602.01 and 602.02.
>
> The oath of declaration is defective because:
>
> It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.
>
> The oath or declaration should be in compliance with the rules in place at the time of filing the application.

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Applicants respectfully traverse the Examiner's rejection of the previously submitted oath/declaration. The comments issued with the rules (1135 O.G. 13,17 (Notice January 9, 1992)) stated that: "The averments in the oath or declaration on the forms presently in use that comply with the previous § 1.63 or § 1.175 will also comply with requirements of the new rules. Therefore, the Office will continue to accept the old oath and declaration forms as complying with the new rules."

Furthermore, Applicants' respectfully submit that the original declaration complies with both the previous and the current rules.

The previous version of 37 CFR 1.63(b)(3), states:

> Acknowledges the **duty to disclose information which is material** to the examination of the application **in accordance with § 1.56(a)**

(emphasis added).

The current version of 37 CFR 1.63(b)(3) states:

> State that the person making the oath or declaration acknowledges the **duty to disclose to the Office all information** known to the person to be material to patentability **as defined in § 1.56**.

(emphasis added).

Applicants' declaration recited:

> I acknowledge the **duty to disclose information which is material** to the examination of this application **in accordance with Title 37, Code of Federal Regulations, § 1.56(a)**.

(emphasis added).

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By acknowledging the duty to disclose information in accordance with 37 CFR 1.56(a), the inventor has acknowledged the "duty to disclose to the Office all information known to that individual to be material to patentability as defined in" 37 CFR 1.56(a) as stated below:

> (a) ... Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to **disclose to the Office all information known to that individual to be material to patentability** as defined in this section.... The duty to disclose **all information known to be material to patentability** is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98....

(emphasis added).

The purpose of rule 37 CFR 1.63 is for inventors to acknowledge the duty of disclosure to the Office. Applicants have clearly done so.

Accordingly, Applicants respectfully submit that the originally filed declaration is in compliance with the rules in place at the time of filing the application. Applications respectfully request that the Examiner accept the previously submitted declaration.

Rejections under 35 USC 112

On page 3 of the Office Action, Claims 1, 10 and 15 were rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement. Specifically, page 3 of the Office Action states that "Claims 1, 10, and 15 the recitation of "no middleware is used" contains a negative limitation which does not have basis in the original disclosure." To advance prosecution, Applicants have amended Claims 1, 10 and 15. Applicants respectfully submit that Claims 1, 10 and 15, as amended, comply with 35 USC 112, first paragraph. Withdrawal of the rejection is respectfully requested.

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Rejections under 35 USC 103

On page 3 of the Office Action, Claims 1-20 were rejected under 35 USC 103(a) as being unpatentable over "CORBA Delays in Software-Defined Radio", by Bertrand et al. (Bertrand) in view of "Implementation of a WNW within the JTRS Operating Environment Using Networking APIs", by Anderson et al. (Anderson) and in further view of "Context-sensitive object request broker for ubiquitous computing environments", by Yau et al. (Yau).

With respect to Claims 1 and 10, page 4 of the Office Action states:

> wherein at least a portion of the object request broker is implemented in hardware (Fig. 2, each processor implementing some of the waveform software, page 152, right col., lines 13-14)

With respect to Claim 15, page 7 of the Office Action states:

> a hardware-implemented (Fig. 2, each processor implementing some of the waveform software, page 152, right col., lines 13-14) object request broker (ORB) ...

> a pluggable portable interface (e.g. ease of technology insertion, CORBA hides details of the hardware architecture, left col., lines 30-44) ... wherein at least a portion of the pluggable control interface is implemented in hardware (Fig. 2, each processor implementing some of the waveform software, page 152, right col., lines 13-14)

With respect to Claims 2, 13 and 17, which have now been incorporated into Claims 1, 10 and 15, respectively, page 5 of the Office Action states:

> wherein the apparatus is an application specific integrated circuit (ASIC) (e.g. processor, Fig. 2, each processor implementing some of the waveform software, page 152, right col., lines 13-14)

Applicants respectfully traverse the rejections. Bertrand, alone or in proper combination with Anderson and Yau, does not describe Applicants' claimed invention as recited in independent Claims 1, 10 and 15 as currently presented.

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Claim 1, as amended, recites, *inter alia*:

> an object request broker that marshals data from the waveform
> application for communication, wherein at least **a portion of the**
> **object request broker is implemented in hardware rather than**
> **software,** wherein the **portion of the object request broker**
> **implemented in hardware comprises an application specific**
> **integrated circuit (ASIC)**

(emphasis added). See paragraphs [0017] and [0025] of the present application.

Claim 10, as amended, recites, *inter alia*:

> marshalling data from a waveform application in a first
> communication device, wherein at least **a portion of the**
> **marshalling operation is implemented in hardware rather than**
> **software,** wherein the portion of the marshalling operation
> implemented in hardware comprises an **application specific**
> **integrated circuit (ASIC)**

(emphasis added). See paragraphs [0017] and [0025] of the present application.

Claim 15, as amended, recites, *inter alia*:

> an object request broker (ORB) that marshals data from a
> waveform application, wherein at least **a portion of the object**
> **request broker is implemented in hardware rather than**
> **software,** wherein the portion of the object request broker
> implemented in hardware comprises an **application specific**
> **integrated circuit (ASIC);**

(emphasis added). See paragraphs [0017] and [0025] of the present application.

Claim 1

Bertrand does not disclose, teach or suggest "**a portion of the object request broker is**
implemented in hardware rather than software" and "wherein the **portion of the object**
request broker implemented in hardware comprises an application specific integrated
circuit (ASIC)" as recited in Claim 1, as amended. Middleware, such as CORBA, is software

that sits between software applications and operating systems. ORB, which is the heart of CORBA (Bertrand, pg. 155, left col., line 60) is also implemented in software (e.g., it is a piece of middleware software that allows programmers to make program calls from one computer to another via a network). Functions can either be implemented in hardware (hard coded) or implemented in software (soft coded). The subject matter of Claim 1, as presented, implements a portion of ORB functions in hardware rather than software. The Office Action points to page 152, right col., lines 13-14 of Bertrand, which states that "processors can be thought of as a network, sharing resources that execute the waveform software." This does not teach that a portion of the ORB is implemented in hardware (e.g., hard coded) rather than software as recited in Claim 1. The processor that executes the software is not the same as hardware, such as logic gates, that replaces the software code to perform the same function. Additionally, Bertrand does not teach that the portion of the ORB implemented in hardware is an ASIC, as recited in Claim 1. Anderson and Yau fail from the same deficiency.

Thus, Bertrand in combination with Anderson and Yau, fails to disclose, teach or suggest each and every element required by Claim 1, as amended. Claims 4-9 and 21 depend from Claim 1 and are allowable for at least the same reasons. Accordingly, the rejection of Claims 1, 4-9 and 21 under 35 USC 103(a) cannot be properly maintained.

Claim 10

Bertrand does not disclose, teach or suggest "**a portion of the marshalling operation is implemented in hardware rather than software**" and "wherein the portion of the marshalling operation implemented in hardware **comprises an application specific integrated circuit (ASIC)**" as recited in Claim 10, as amended. Bertrand teaches that the ORB performs the marshalling operation (Bertrand, pg. 155, left col., line 63). As described above with respect to Claim 1, CORBA and ORB are implemented in software (e.g., they are software programs). Therefore, the marshalling operation of Bertrand is implemented in software. The subject matter of claim 10, as presented, implements a portion of the marshalling operation in hardware rather than software. The Office Action points to page 152, right col., lines 13-14 of Bertrand, which

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states that "processors can be thought of as a network, sharing resources that execute the waveform software." This does not teach that a portion of the marshalling operation is implemented in hardware (e.g., hard coded) rather than software as recited in Claim 10. Nor does it teach that the portion of the marshalling operation implemented in hardware is an ASIC, as recited in Claim 10. Anderson and Yau fail from the same deficiency.

Thus, Bertrand in combination with Anderson and Yau, fails to disclose, teach or suggest each and every element required by Claim 10, as amended. Claims 11-12 and 22-23 depend from Claim 10 and are allowable for at least the same reasons. Accordingly, the rejection of Claims 10-12 and 22-23 under 35 USC 103(a) cannot be properly maintained.

Claim 15

Bertrand does not disclose, teach or suggest "an object request broker (ORB) that marshals data ... wherein at least **a portion of the object request broker is implemented in hardware rather than software**" and "the portion of the object request broker implemented in hardware **comprises an application specific integrated circuit (ASIC)**" as recited in Claim 15, as amended. As described above with respect to Claim 1, CORBA and ORB are implemented in software (e.g., they are software programs). Therefore, the ORB of Bertrand is implemented in software. The subject matter of claim 15, as presented, utilizes an ORB that is at least partially implemented in hardware rather than software. The Office Action points to page 152, right col., lines 13-14 of Bertrand, which states that "processors can be thought of as a network, sharing resources that execute the waveform software." This does not teach that a portion of the ORB implemented in hardware (e.g., hard coded) rather than software as recited in Claim 15. Nor does it teach that the portion of the ORB is implemented in hardware is an ASIC, as recited in Claim 15. Anderson and Yau fail from the same deficiency.

Thus, Bertrand in combination with Anderson and Yau, fails to disclose, teach or suggest each and every element required by Claim 15, as amended. Claims 16, 19-20 and 24-26 depend

from Claim 15 and are allowable for at least the same reasons. Accordingly, the rejection of Claims 15-16, 19-20 and 24-26 under 35 USC 103(a) cannot be properly maintained.

Dependent Claims 8, 11 and 16

With respect to Claims 8, 11 and 16, the Office Action states:

> Wherein at least a portion of the object request broker that is implemented in hardware comprises logic and data formatting functions (e.g. CORBA™ call copying of data, page 975, right col., line 36 of Anderson) that are determined to consume excessive processor throughput (e.g. transport delays) for a software application (the CORBA™ call copying of data and associated transport delays had to be addressed because the WNE protocol is a TDMA schema with tight real-time requirements, page 975, right col., lines 36-39 of Anderson).

Applicants respectfully traverse the rejections of Claim 8, 11 and 16. Bertrand, alone or in proper combination with Anderson and Yau, does not describe Applicants' claimed invention as recited in Claims 8, 11 and 16 as currently presented.

Claim 8 recites, *inter alia*:

> wherein the at least a portion of the object request broker that is **implemented in hardware comprises logic and data formatting functions that are determined to consume excessive processor throughput** for a software application

(emphasis added).

Claim 11 recites, *inter alia*:

> wherein the at least a portion of the marshalling operation that is **implemented in hardware comprises logic and data formatting functions that are determined to consume excessive processor throughput** for a specific software application

(emphasis added).

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Claim 16 recites, *inter alia*:

> wherein the at least a portion of the pluggable protocol interface
> that is **implemented in hardware comprises logic and data
> formatting functions of the ORB that are determined to
> consume excessive processor throughput** for a specific software
> application and an interface to a shared memory pool

(emphasis added).

Anderson does not disclose a portion of an ORB, a marshalling protocol or a pluggable protocol interface "that is **implemented in hardware comprises logic and data formatting functions**" wherein the functions "**are determined to consume excessive processor throughput**" as recited in Claims 8, 11 and 16. The Office Action points to page 975, right col., lines 36-39 of Anderson, which states that "the CORBA™ call copying of data and associated transport delays had to be addressed because the WNE protocol is a TDMA schema with tight real-time requirements." This does not teach a hardware implementation (e.g., hard coding) of any portion of an ORB, a marshalling protocol or a pluggable protocol interface, nor does it teach implementing in hardware, logic and data formatting functions that are determined to consume excessive processor throughput. Instead, Anderson discusses resolving the problem of transport delays through alternative transfer methods that are implemented by software (e.g., the functions and calls are soft coded, not hard coded). (Anderson page 975, right col., lines 36-48). Bertrand and Yau fail from the same deficiency.

Thus, Bertrand in combination with Anderson and Yau, fails to disclose, teach or suggest each and every element required by Claims 8, 11 and 16. Accordingly, the rejection of Claims 8, 11 and 16 under 35 USC 103(a) cannot be properly maintained.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

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The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 18-1722. If any extensions of time are needed for timely acceptance of papers submitted herewith, the Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorize payment of any such extensions fees to Deposit Account No. 18-1722.

Respectfully submitted,

Date ___3/4/2008___   By ___Kyle Eppele___

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